

CXENERGY 2025



APRIL 28 - MAY 01, 2025 • CHARLOTTE, NC

CONFERENCE **PROGRAM**

PRESENTED BY:









Welcome to ECXENERGY 2025

PRESIDENT'S WELCOME



Troy Byers, PE, TBE, CxA ACG President

Dear Colleagues:

On behalf of ACG, EMA, and AABC, welcome to CxEnergy 2025!

In addition to the excellent professional development and networking that you have come to expect, you'll see that this year we've added some special touches as we celebrate the 20th anniversary of ACG's founding in 2005! A special thank you to the founding members who are still with us two decades later.

Many thanks as always to our members, sponsors, speakers, exhibitors, and staff who help make CxEnergy the industry's premier event for commissioning, energy management, and testing professionals!

Sincerely,

Troy Byers, PE, CxA, Cx Solutions, LLC, ACG President

PROGRAM AT A GLANCE

TIME	MONDAY, APRIL 28	TUESDAY, APRIL 29	
7:00 a.m 8:00 a.m.	Registration for CxA Workshop & EMP Seminar		
8:00 a.m 5:00 p.m.	Commissioning Authority (CxA) Workshop & Exam		
8:00 a.m 5:00 p.m.	Energy Management Professional (EMP) Seminar & Exam		
7:30 a.m 2:00 p.m.		CxEnergy Open Golf Tournament	
5:00 p.m 7:00 p.m.		Welcome Reception in the Expo Hall	
TIME	WEDNESDAY, APRIL 30	THURSDAY, MAY 1	
7:00 a.m 8:00 a.m.	Breakfast & Registration		
8:00 a.m 9:30 a.m.	Opening Session & Keynote	8:00 a.m 11:30 a.m.	Concurrent Technical Sessions
9:30 a.m 10:15 a.m.	"Meet & Greet" in the Expo Hall	11:30 a.m 12:30 p.m.	Brown Bag Lunch
10:30 a.m 12:40 p.m.	Concurrent Technical Sessions	1:00 p.m 2:00 p.m.	Tour of NASCAR Hall of Fame
12:40 p.m 2:15 p.m.	Lunch & Technology Theater in the Expo Hall	Break	fast and lunch will be provided
2:15 p.m 5:35 p.m.	Concurrent Technical Sessions	for all pre-conference workshops and seminars.	
5:35 p.m 7:30 p.m.	Grand Reception in the Expo Hall		

CXENERGY **OPEN Golf Tournament**

Tuesday, April 29

7:30 a.m. - 2:00 p.m. **Rocky River Golf Club at Concord**

Meet at the Sheraton covered entranceway & flag poles at 7:00 a.m.

Hosted by

- Breakfast and two drink tickets will be provided at the course
- \$65 rental club fee (reserve early and pay directly to course)
- Backward Shotgun start / Captain's Choice format
- Registration is closed for this event.

Contact ACG Headquarters at events@commissioning.org

Tour of NASCAR Hall of Fame



Thursday, May 1 1:00 p.m. to 2:00 p.m.

Enjoy a guided tour of the NASCAR Hall of Fame museum, located just half a mile from the conference hotel! Meet in the hotel lobby at 12:30 p.m. Duration: Guided portion is 60 minutes, followed by self-guided exploration until closing.

Exhibits Covered: Great Hall, Glory Road, Hall of Honor, Race Week section (hands-on activities).

Registration is closed for this event.

Download the App!

- Track CEUs
- Create your Schedule
- Message Attendees
- View Sponsors & Exhibitors



PRE-CONFERENCE EDUCATIONAL & CERTIFICATION OPPORTUNITIES



Commissioning Authority Workshop & Exam

Monday, April 28 – Tuesday, April 29 8:00 a.m. – 5:00 p.m., \$1,050 Room: Mecklenburg I



Energy Management Professional Seminar & Exam

Monday, April 28 – Tuesday, April 29 8:00 a.m. – 5:00 p.m., \$1,050 Room: Mecklenburg II



Welcome Reception in the Exhibit Hall

Tuesday, April 29 · Symphony Ballroom

5:00 p.m. – 7:00 p.m.

Enjoy complimentary cocktails and hors d'oeuvres and network with your colleagues while interacting with the latest tools and technologies for commissioning, TAB, and energy management.

WEDNESDAY FEATURED EVENTS



Keynote Speakers | April 30, 8:30 a.m. – 9:30 a.m. Location: Carolina Ballroom

Bobby and Kristin Labonte

The Fortitude of a Champion

A husband-and-wife duo of titled and accomplished professional athletes, Bobby and Kristin Labonte stand shoulder to shoulder in life and in business. In this keynote, Bobby, a NASCAR Hall of Famer, and Kristin, a champion cyclist, will share experiences from throughout their sports and professional careers that highlight resiliency, winning and losing, and getting up after being knocked down. Through these stories, the Labontes will discuss how they developed resilience, courage, confidence, and, above all else, fortitude.

Meet & Greet in the Expo Hall

Wednesday, April 30, 9:30 a.m. -10:15 a.m. Giveaways (must be present to win) and Golf Awards

CxEnergy Technology Theater

Wednesday, April 30, 12:40-1:40 p.m. Location: CxEnergy Expo Hall, Symphony Ballroom

12:50 p.m.



BlueRithm

1:30 p.m.

Ameritech

1:50 p.m.

ARMSTRONG



7:00 a.m. Registration Open | 7:00 a.m. - 8:00 a.m. Breakfast | 8:00 a.m. - 9:30 a.m. Opening Session & Keynote

Mecklenburg Ballroom 1 & 2

With Great Power Comes Great Redundancy: Lessons Learned from Commissioning New Stuff in Existing Data Centers

Mark Gelfo, P.E., CxA, EMP, LEED Fellow, Jay Martin, P.E., CxA, CEM, LEED AP, TLC Engineering Solutions Michael Umscheid, DPR

10:30 a.m. -

11:30 a.m. 99.99% reliability is not enough for data centers facing everincreasing demands for additional capacity, reliability, and efficiency while replacing older electrical systems with newer, more reliable equipment. We will present commissioning case studies of recent data centers that replaced and added key components of their electrical infrastructure while maintaining 100% uptime.

Case Study: Commissioning a Chip Manufacturing Plant

Derek De Jesus, CxA, DDJCx Earl LaFlamme, CxA, Catalyst Commissioning Group, LLC Mike Lewis, P.E., WolfSpeed

11:40 a.m. 12:40 p.m.
 This presentation will focus on a project at a chip manufacturing plant outside of Charlotte, NC. Members of the project team will discuss the quality and Cx process for this fast-track, multi-phase DOE-funded green field site that used the IPD approach and owner-furnished equipment. They will highlight challenges that occur when teams are brought in late to the IPD, as well as in-flight modifications to the plan.

12:40 p.m. - 2:15 p.m. Lunch & Technology Theater in Expo Hall

Building Owner Commissioning Process (BOCx)

James Magee, CxA, EMP, MACx Consulting

2:15 p.m. 3:15 p.m.
No singular solution meets the needs for every building owner. Our quest to demystify the vagaries of building systems Cx begins with organizing and consolidating references to meet the specific high-speed daily schedules of our clients. Building Owner Cx presents a plan to provide lasting understanding of owner and owner vendor roles and responsibilities.

Case Study: Mission-Critical Cx – Streamlining Airport Projects with Visual Cx Tools

Thomas Jarloev, CxPlanner

3:25 p.m. 4:25 p.m.
 Copenhagen Airport previously managed projects with Excel sheets, leading to issues and delays. A new commissioning process was developed to improve projects and quality. This Cx process now supports over 100 projects per year, valued at over \$150M, using digital tools like Gantt charts and Kanban boards. This presentation shows how these tools are used to enhance collaboration.

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Carolina A

Building Decarbonization - Key Issues and Solutions for Occupancy, Wellness and Sustainability

Al LaPera, CxA, EMP, LEED AP, Kimley-Horn Associates Sarah Maston, Colliers Project Leaders Kevin Brown, P.E., EMP, LEED AP, CEM, CMVP, HBDP, KBSquared

This session provides designers with information about the key issues of decarbonizing buildings, as well as specific steps to be taken to reduce greenhouse gas emissions from the building industry. It will include recent research on buildings and embodied carbon, focusing on increasing sustainability. Presenters will demonstrate how engineers, architects, and owners can leverage their roles and the available tools to reduce the EC content of their buildings.

Delivering the Next Generation of Cx Services via EMIS-based Automated Functional Testing

Armando Casillas,

Lawrence Berkeley National Laboratory

This presentation will highlight work done by LBNL and its industry partner to develop and deploy automated functional performance tests via energy management and information systems (EMIS) software, including: 1) descriptions of openloop component tests and closed-loop system tests; and 2) group tests aimed at screening for problematic equipment and individual tests for isolating root-causes.

The Challenge of Commissioning Aquatic Centers

Jared Higgins, P.E., CxA, CEM, GGP, Parkhill

Commissioning building systems is often complex, and some facilities provide greater opportunities than others. Aquatic centers contain specialized equipment that requires coordination with multiple building trades. Integrating commissioning into the project is critical for project success and should be included throughout all phases of the design and construction.

Leveraging "Golden Opportunities" – UGA Energy Utility Master Planning Case Study

Jason Perry, CEM, University of Georgia Ben Dombrowski, Jacobs

This presentation will explore a unique opportunity at the University of Georgia and the "golden opportunities" at the alignment of campus goals. We will look at conditions that drove scenario creation, how nexus points were identified, and the creation of an actionable roadmap to modernize the campus thermal utility infrastructure.

9:30 a.m. - 10:15 a.m. Meet & Greet with Sponsors & Exhibitors - Expo Hall (Including golf awards & attendee giveaways)

	Carolina C	Mecklenburg 3
	Streamline Data Collection for Energy Audits and Condition Assessment	Building Enclosure Resiliency Trends, Current Conditions, and Future Planning
	Hardik Miyani, P.E., CEM, LEED GA, Baumann Consulting Jacob Terry, CxAlloy	Jason O'Boyle, P.E.& John Runkle, Pinchin, LLC
0:30 a.m 1:30 a.m.	This session explores different techniques to more efficiently collect data for energy audits, condition assessments, and other commissioning-adjacent projects. Attendees will learn how to leverage software tools to increase efficiency and reduce errors when gathering data based on lessons learned (some painful) from real projects.	Climate change is bringing more extreme weather events throughout the built environment. This presentation explores the principles and practices essential for enhancing the durability and performance of building envelopes, educates the audience on how our existing buildings are performing against recent weather events, and examines ways to improve design, construction, and maintenance of these assets.
1:40 a.m 2:40 p.m.	Importance of AI in the Utility and Facility Management Industries Robert Knoedler, P.E., CxA, EMP, Hanson Professional Services Kevin Scarborough, P.E., LEED AP, Siemens Smart Infrastructure Sarah Uranowski, EnergyCAP The world's appetite for energy continues to grow, with estimates of a 60% increase above current demands by 2050. With buildings and facilities accounting for approximately 40% of energy consumption, concerted efforts will be required to reduce demand and increase efficiency. This panel will discuss the various ways artificial intelligence is being employed to help	Looking for the Future: Commissioning Beyond 2025 Amy Pastor, P.E., CxA, EXP Sarah Maston, P.E., Colliers Project Leaders Christian Javorski, CxA, Cadin Group LLC This panel discussion features female leaders in sustainability and commissioning. Through their decades of experience and knowledge of future regulations, certifications, and goals for decarbonization, the panel will look to the future of commissioning and what the industry may expect moving forward.
	ensure optimum performance of facility systems.	
2:40 p.m 2	15 p.m. Lunch & Technology Theater in Expo Hall	
	A Proactive Approach to Functional Testing: The Power of PVTs	Test, Adjust & Balance: Lessons Learned for Engineers, Cx & Energy Providers
	Alex Kozinets, Facility Grid	Brian Venn, TBE, CxA, Mechanical Testing

This presentation highlights for engineers, Cx and energy providers common system and procedural issues that TAB providers discover in the course of completing their work. Learning how to collaborate with the TAB provider to overcome these challenges benefits the design professional, construction team, commissioning provider, and ultimately the building owner.

Specifying Duct Leakage - Percent Leakage vs Leakage Class

Gaylon Richardson, TBE, CxA, Engineered Air Balance Co., Inc. Mike Kelly, TBE, CxA, American Testing, Inc.

Stephen Seller, P.Eng., EIT, BECxP+BE,

Massachusetts Institute of Technology

how PVTs are transforming construction.

Discover the power of Pre-Verification Tests (PVTs) in

preventing common pitfalls and ensuring project success.

PVTs align teams, buy scope, and reduce finger-pointing by

verifying system readiness before Functional Testing. Hear

real-world stories from MIT on how PVTs catch issues early, preventing costly rework and failed tests. Join us to discuss

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2:15 p.m. -

3:15 p.m.

3:25 p.m. Energy efficiency is a main concern for HVAC systems
 4:25 p.m.
 Energy efficiency is a main concern for HVAC systems
 relating to duct system leakage. The concerning question is how the engineer specifies duct leakage in specifications. This presentation will discuss leakage standards and considerations for energy losses.

How to Successfully Implement the Monitoring-Based Commissioning (MBCx) Process in New and Existing Building Construction

Steve Vang, CxA; Tim Gilbert, P.E., CxA, EMP; & Mike Lodge, Impact Cx

Monitoring-Based Commissioning (MBCx) requirements are becoming more prevalent in buildings as AI workload increases, buildings become more sophisticated, and 2021 IECC codes and standards are adopted. However, incorporating the MBCx process can be a challenge. This presentation will focus on the MBCx process, how to successfully deliver MBCx requirements in all project phases, and the role that Fault Detection & Diagnostics play in a successful MBCx program.

4:35 p.m 5:35 p.m.	Charlottee Airport Expansion Commissioning: Cx Between Flights Wade Conlan, P.E., CxA, LEED AP, Christa Barsanti, El, Hanson Professional Services Commissioning expansion projects can be difficult to work around the operations of the existing facility, which only gets heightened when the facility is an active airport and the project is a 190,000 square foot expansion of an existing terminal. This session will discuss the scheduling issues for testing certain systems, such as emergency power, baggage handling, and air handling units serving active and renovation spaces.	North Carolina's Implementation of Carbon Reduction Goals at the NC Utilities Commission Ethan Blumenthal, North Carolina Sustainable Energy Association Hannah Elliott, Renu Energy Solutions Stephanie Jett, Duke Energy Aaron Tauber, City of Charlotte This presentation will discuss the ongoing implementation of House Bill 951 and its carbon reduction mandates for the electricity sector, along with various customer programs currently offered by Duke Energy.
5:35 p.m 7:3	0 p.m. Grand Reception in the Expo Hall	
THURSDAY	(, MAY 1, 2025	
7:00 a.m . Reg	istration Open 7:00 a.m 8:00 a.m. Breakfast Ca	rolina D
8:00 a.m 9:00 a.m.	Commissioning Charlotte's First All-Electric Firehouse: Charlotte Firehouse No. 30 Wally Ray, P.E., LEED AP, Will Page, TLC Engineering Solutions Heather Bolick, City of Charlotte Andrew Shuster, BPL Enclosure Presenters will discuss the design review and commissioning of a new two-story firehouse. Scheduled for April 2025 completion, this firehouse will be a LEED certified space and is among the first all-electric, zero carbon facilities for the City of Charlotte.	Distributed Generation, Energy Storage and Interoperability Vehicle to Grid (V2G) Technology and Electric Vehicle (EV) Charging Systems Cx Mark Siira & Wayne Stec, IEEE Standards Committee 21 Electric vehicle fast-charging plazas are complexes integrating a wide variety of digital technologies and hardware/ software, as well as grid interfaces requiring significant operational coordination. These plazas need sophisticated energy management systems to make a seamless and safe interconnection to the electric grid. This presentation will delve into technical design development and commissioning process details of this emerging mainstream technology.
9:15 a.m 10:15 a.m.	The Essential Role of Commissioning in Complex Technology Systems <i>Noelle Thornton, P.E., CxA, BCxP,</i> <i>Brett Farbstein, LEED AP, CannonDesign</i> Commissioning technology systems is an important and often overlooked process. It is not mandated in any codes or standards. However, many buildings have complicated systems that can benefit from the commissioning process. In this presentation, we will discuss commissioning of audio/visual systems, public address systems, and access control systems, as well as when commissioning may be an important service.	Sustainable Design + High-Performance Commissioning = Zero at the Meter (Achieving True Net Zero) Charles Jackson, P.E., CxA, CEM, LEED AP, CMTA, Inc. Brian Atkinson, CxA, Well AP, Sustainable Building Partners It takes the entire project team to truly achieve net-zero for a facility and to meet the widely accepted and brand new Zero Emissions Standard developed by the Dept of Energy and ASHRAE. As the commissioning provider, we play a large part in the process. This presentation will highlight successful examples of net-zero realization and the challenges encountered along the way.
10:30 a.m 11:30 a.m.	Unleashing the Power of Resilient Retrofits Stevan Vinci, CET, LEED Fellow, & Jamie McKay, P.E., LEED Fellow, Glumac Dive into the high-performance building revolution with us as we unleash the potential of existing buildings. These structures, often overlooked in the new construction race for energy efficiency, hold the key to reducing our carbon footprint. Whether you are pursuing a building certification or planning a deep energy retrofit, our session will equip you with a holistic approach to asset renewal.	LBNL's Existing Building Commissioning Catalyzer: Facilitating Increased Market Uptake of Existing Building Commissioning Services Joshua Kace, Lawrence Berkeley National Laboratory LBNL's EBCx Catalyzer has been working with building owners, jurisdictions, utilities, and commissioning providers to facilitate increased market uptake of existing building commissioning services. This session will talk through efforts across the US where the EBCx Catalyzer looks to drive increased commissioning activities in support of improved efficiency and cost-effective utility cost reductions.

Carolina A

Mecklenburg Ballroom 1 & 2

Carolina C	Mecklenburg 3
Case Study: Implementing Automated BAS Cx	Who Is My Client and Where Does My
in Schools and Campuses	Responsibility Land?
Saheel Chandrani, PingCx	Chris S. Smith, P.E., CxA, EMP, LEED AP, Bill Hardiman, P.E., CxA, Jacobs
and expansion plans implemented a district-wide Building	The commissioning process can be applied to many types
Management System to enable real-time testing &	of projects and is often contracted through a variety of
validation, standardized commissioning processes, and	methods. Commissioning providers are called upon to
automated documentation across multiple buildings.	navigate multiple, and often complicated, relationships.
Results showed 50% faster completion time, reduced labor	While navigating projects, the commissioning provider can
costs and comprehensive system verification, providing a	be faced with difficult situations that call into question the

5:35 p.m. - 7:30 p.m. Grand Reception in the Expo Hall

THURSDAY, MAY 1, 2025

4:35 p.m. -

5:35 p.m.

10:30 a.m. -

11:30 a.m.

7:00 a.m. Registration Open | 7:00 a.m. - 8:00 a.m. Breakfast | Carolina D

smooth handover for new school construction projects.

Creative BECx Protocols, Mock-up Testing and Examples of Some Lessons Learned

Stephen Seller, P.Eng., EIT, BECxP+BE, Massachusetts Institute of Technology Jeffrey Ng, AIA, LEED AP, Intertek

8:00 a.m. -This presentation will include BECx lessons learned from projects as well as a discussion of mock-up testing. 9:00 a.m. Presenters will discuss unconventional test methods for one of a kind components and samples of unique test strategies developed to confirm BECx components when field conflicts occur. Mock-up testing is an invaluable tool that we use to allow onsite pre-testing before components are installed on the main buildings.

Case Study: Collaboration Throughout the TAB Process on a Performance Art Center

path they should take in executing their duties.

Alvin Beddingfield, Jr., TBE, Engineered Air Balance Co., Inc.

This informational session will focus on the obstacles encountered during the construction and TAB process of a visual performance art center and administration building. We will discuss challenges associated with the TAB process on a non-typical building designed with numerous elevation changes and specialty finishes and highlight the strategies we employed to overcome them.

Cracking the Code: Tackling the Toughest Challenges in HVAC Flow Measurement

Al LaPera, CxA, EMP, LEED AP, Kimley-Horn Associates Eugene Sollog, ONICON

Mike Morwin, TBE, CxA, Mechanical Testing, Inc. 9:15 a.m. -

Flow measurement is essential for optimizing HVAC systems, 10:15 a.m. but industry professionals often face challenges that hinder efficiency and performance. This panel discussion will explore common issues faced in the field, share insights on overcoming them, and offer practical solutions to enhance flow measurement practices in HVAC systems.

Maximizing Impact: How AI Frees Commissioning **Providers to Focus on the Highest Value Tasks**

Matthew Cooper, P.E., CxA Chris Purdie, Group14 Engineering

Commissioning providers make daily decisions on how to maximize the value we provide to a project within limited time and resources. This session will discuss how AI allows engineers to guickly access the critical details we need to deliver value.

What is the Role of Sustainability in Your Data Center?

Sean Butler, CxA, CAP, BranchPattern

On the surface, the phrase "sustainable data center" appears to be an oxymoron. Data centers are known to be massive energy consumers. In fact, data centers are estimated to account for 10% of all energy consumption in the United States by 2026. We will discuss the role of retro commissioning and ongoing commissioning in a data center to reduce energy consumption and promote sustainable operations.

Training 101: The Basics for Establishing a **Project's Training Program**

John Anthony Hitsos, P.E., CxA, Jacobs

To ensure a new facility's equipment is properly operated, utilized, and maintained, an organized and well-planned training program is required. Although a primary function of the contractor and vendor, it often falls to the CxA to establish, monitor, and document the training program. Creating a training program begins with design specs and follows through test and documentation completion.

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_	2 hBan	-

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